

Marianela Cortés Muñoz

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PERSONAL INFORMATION

Birthplace: San José, Costa Rica
Date of birth: April 23th, 1976
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CURRENT POSITION

Director of Proinnova.
Associate Professor at University of Costa Rica.
Researcher at the National Research Center of Food Science and Technology (CITA).

ACADEMIC FORMATION

2009-2010: Postdoctoral Position. Institut Européen de Membranes. CNRS-ENSCM- Université Montpellier 2. France.
2009: Ph.D. in Biochemistry, Chemistry and Food Technology. Université Montpellier 2, France. Mention: très honorable avec félicitations du jury.
2004: Licenciatura degree in Food Technology. University of Costa Rica. Cum Laude.

WORK EXPERIENCE

- March 2013 to the date. **Director of Proinnova**. Office for the Management and Transfer of Knowledge for Innovation. University of Costa Rica.
- 2002 to the date. **Researcher / Teacher**. Specialty: Dairy Science, Membranes technology, Innovation & food product development, technology transfer and training programs for the food industry. National Center of Food Science and Technology. University of Costa Rica.
- 2010 to the date. **Coordinator of the Research Program "Improvement of the Costa Rican Dairy Sector"**. Research, training programs and technology transfer. National Center of Food Science and Technology. University of Costa Rica.
- May 2010 to February 2013. **Member of the Research Commission**. National Center of Food Science and Technology. University of Costa Rica.
- May 2010 to April 2011. **Member of the Quality Team**. Food Industry counseling, food safety and quality (GPM, HACCP, ISO 2200). National Center of Food Science and Technology. University of Costa Rica.
- November 2009- May 2010: **Invited researcher**. Separation of lactic acid of a banana broth using membranes technologies. European Membrane Institute. Université Montpellier 2, France.

TEACHING EXPERIENCE

- Dairy Technology, Unit Operations in Food Processing. Food Science Department. Engineering degree. University of Costa Rica.
- Principles of Food Science. Optional course. Food Science Department. University of Costa Rica.
- Food Processing, Food Science Seminar I & II. Master degree in Food Science. University of Costa Rica.

RESEARCH EXPERIENCE

- 2012 to the date. Coordinator. Deacidification of tropical fruit clarified juices with high bioactive compound content and high acidity using membrane technologies. CITA- UCR.
- January 2010-March 2013. Coordinator. Study of nanofiltration and electrodialysis for recovery and purification of (L)-lactic acid obtained from fermentation of agroindustrial wastes.
- January 2012 to the date. Associate researcher. Evaluation of the utilization of whey as a biopreservative for vegetable processing.
- January 2009 - March 2013. Associate researcher. Development of strategies to improve the functional and nutritional value of dairy products in Costa Rica.
- January 2011- October 2012. Coordinator. Development of a fermented whey beverage with probiotics.
- January 2009 - December 2012. National Coordinator. QUEARTIB - CYTED Revaluation of artisanal cheese and dairy fermented products in Iberoamerica.
- January 2009 - December 2012. Associate researcher. Synthesis and characterization of biodegradable polymers prepared from (L)-lactic acid obtained from agroindustrial wastes of banana *Musa AAA (Cavendish cultivar Gran naine)* and pineapple (*Ananas comusus*).
- September 2005 - March 2009: Ph. D. student. Biochemistry and Food Technology Laboratory. Research Unit of Emerging Technologies and Agropolymers Engineering. Université Montpellier 2, France.
- January 2005 - December 2008. Associate researcher. European Project UHPH 512626 Development and optimization of a continuous ultra-high pressure homogenization equipment for animal and vegetable milk application. Université Montpellier 2, France.
- January 2005 - December 2011. Associate researcher. Study of new technologies and new dairy products.
- January 2002- August 2005. Associate researcher. Application of Science and Technology in micro, small and medium companies from agroindustrial sector in the rural area of Latin America and Caribbean countries. OAS-CITA-University of Costa Rica.
- March 2002 – August 2004. Associate researcher. Improvement of the Association of Dairy Plants from Turrialba (ASOPLUT).CITA-MICIT-ASOPLUT.

PUBLICATIONS

- E. BOZA-MÉNDEZ, R. LÓPEZ-CALVO, **M. CORTÉS-MUÑOZ**. 2012. Innovative Dairy Products Development Using Probiotics: Challenges and Limitations. In: Rigobelo, E.C. (Ed). Probiotics. Croacia: InTech.
- M. CORTÉS-MUÑOZ**. 2011. Etudes des effets de l'homogénéisation à ultra-haute pression (UHPH). Caractérisation d'agrégats protéiques et émulsions submicroniques. Saarbrücken : Éditions Universitaires Européennes.
- CHEVALIER-LUCIA, D., **CORTÉS-MUÑOZ, M.**, PICART-PALMADE, L., DUMAY, E. 2009. Submicron emulsions processed by ultra-high-pressure homogenization. High Pressure Research, 29 (4): 732-738.
- CORTÉS-MUÑOZ, M.** 2009. Caractérisation d'agrégats protéiques et d'émulsions submicroniques préparés par homogénéisation à ultra-haute pression. Ph.D. Thesis. Université Montpellier 2. Francia.

CONFERENCES

- M. CORTÉS-MUÑOZ**, D. CHEVALIER-LUCIA, E. DUMAY. 2009. Characteristics of submicron emulsions prepared by ultra-high-pressure homogenisation. Effect of chilled or frozen storage. *Food Hydrocolloids*, 23: 640-654.
- GRACIÀ-JULIÀ, A., RENÉ, M., **CORTÉS-MUÑOZ, M.**, PICART, L., LÓPEZ-PEDEMONTE, T., CHEVALIER, D., DUMAY, E. 2008. Effect of dynamic high pressure on whey protein aggregation. A comparison with the effect of continuous short-time thermal treatments. *Food Hydrocolloids*, 22: 1014-1032.
- CORTÉS-MUÑOZ, M.** 2004. Development of the Good Manufacturing Practices Manual for the fresh cheese and creme production at Bella Vista and training in Good Milking Practices for the milk suppliers. Licenciatura degree Thesis, University of Costa Rica.
- M. CORTÉS-MUÑOZ.** Dairy Functionals Products. Seminar "Innovation and the functional food products market". MICIT-CYTED-IBEROEKA. San José (Costa Rica). November 2012.
- M. CORTÉS-MUÑOZ.** Sustainability in cheese factory. First Iberoamerican Seminar of Cheese. Colonia. (Uruguay), October 2012.
- M. CORTÉS-MUÑOZ.** Innovation tendencies in the Dairy Industry. Universidad Nacional Autónoma de Nicaragua. Managua (Nicaragua), September 2012.
- M. CORTÉS-MUÑOZ.** Sustainability processing of cheese. First Congress of Artisanal Costarican Cheeses. Alajuela (Costa Rica), Marzo 2012.
- M. CORTÉS-MUÑOZ.** Tendencies related to the dairy product demand according to the consumers preferences. XI National Congress of Dairy Industry. Managua (Nicaragua), February 2012.
- M. CORTÉS-MUÑOZ.** Tendencies and innovations in the dairy product development. Central America Congress of the Dairy Sector 2011. National Chamber of Milk Producers. San José (Costa Rica), December 2011.
- M. CORTÉS-MUÑOZ.** Milk quality and its influence on industrialization process. Seminar. Pan American Dairy Federation. Punta del Este (Uruguay), November 2011.
- M. CORTÉS-MUÑOZ.,** D. CHEVALIER & E. DUMAY. Characterization of protein aggregates and submicron emulsions prepared by ultra-high pressure homogenization (UHPH). IV National Congress of Food Science and Technology: Food, Innovation and y Health. San José (Costa Rica), October 2009.
- M. CORTÉS-MUÑOZ,** D. CHEVALIER & E. DUMAY. UHPH processed submicron emulsions. First Conference: Investigation in Agro and Food Science. University of Costa Rica. San José (Costa Rica), October 2009.
- D. CHEVALIER, **M. CORTÉS-MUÑOZ,** E. DUMAY. Submicron emulsions processed by ultra-high pressure homogenisation. 47th EHPRG EHPRG International Conference of High Pressure. Paris (France), September 2009.
- E. DUMAY, **M. CORTÉS-MUÑOZ,** M. RENÉ, A. BENZARIA, D. CHEVALIER. Protein-based nano-particles obtained through high pressure homogenisation. 46th EHPRG International Conference of High Pressure. Valencia (España), September 2008.
- M. CORTÉS-MUÑOZ,** M. RENÉ, A. GRACIÀ-JULIÀ, T. LÓPEZ-PEDEMONTE, D. CHEVALIER AND E. DUMAY. Protein aggregation by dynamic high pressure. Seminar of the Doctoral School Processing Science - Food Science. Montpellier (Francia), Junio 2008.

T. LÓPEZ-PEDEMONTTE, M. RENÉ, A. GRÀCIÀ-JULIÀ, **M. CORTÉS-MUÑOZ**, D. CHEVALIER, E. DUMAY. Effect of dynamic high pressure on protein aggregation: controlled protein aggregation at the nanoscale range. ICEF 10. International Food Engineering Congress. Viña del Mar (Chile), Abril 2008.

E. DUMAY, L. PICART, M. RENÉ, A. GRÀCIÀ-JULIÀ, **M. CORTÉS-MUÑOZ**, D. CHEVALIER, J.C. CHEFTEL. Ultra high pressure homogenisation of raw whole milk: effects on physico-chemical and biochemical characteristics, and on microbial inactivation. 13vo World Food Congress "Food is life", IUFoST. Nantes (France), September 2006.

E. DUMAY, L. PICART, M. RENÉ, A. GRÀCIÀ-JULIÀ, **M. CORTÉS-MUÑOZ**, D. CHEVALIER, J.C. CHEFTEL. Effect of high pressure homogenisation on milk proteins. Applied and Food Emerging Technologies. High Pressure European Seminar. Barcelona (España), Julio 2006.

M. CORTÉS-MUÑOZ. Training strategy in Good Milking Practices. III National Congress of Food Science and Technology. Technology in a world without borders. CITA-UCR-MICIT-MAG. San José (Costa Rica), April 2004.

SCHOLARSHIP-HONORS

- September 2005 to march 2009. Ph.D scholarship granted by University of Costa Rica and the French Embassy in Costa Rica.

SKILLS

- Knowledge of foreign language: French (Reading, writing and speaking: excellent level), English (Reading, writing and speaking: advanced level), Italian and Portuguese (Reading: medium level).

PERSONAL INTERESTS

I practice sports, love to travel and experience different cultures.